(US 5,501,759) in view of Wysocki et al (US 5,339,380) and further in view of Erlich (4,772,275) and Vrba (US 5,957,930). Claim 24 was rejected under 35 USC 103(a) as being unpatentable over Forman (US 5,501,759). Claim 24 was rejected under 35 USC 103(a) as being unpatentable over Forman (US 5,501,759) in view of Wysocki et al (US 5,339,380) and further in view of Buchroeder et al (US 4,623,776). These rejections will be addressed in sections using the paragraph numbering of the Office Action. Claims 1 and 27 have been amended. No new matter has been added.

3

In the Office Action dated May 23, 2002 claim 14 was rejected under 35 USC 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The Office Action does not identify what is considered indefinite about the claim. Assuming for the sake of argument that it is the alternative language, MPEP 2173.05(h) II supports the use of the word "or" in a claim. If this is not the reason for the indefiniteness rejection, we request reissuance of the Office Action with the rejection clarified.

5

In the Office Action dated May 23, 2002 claims 1, 15, 27-29 were rejected under 35 USC 102(b) as being anticipated by Forman (US 5,501,759). The Office Action notes that the bond site in Forman is annular and that the cross-sectional area of Forman's optical fibers is substantially circular and that the laser beam exiting from the optical fibers is inherently substantially circular.

This is precisely the difference between Forman and the instant claims. The instant claims require generating one or more annular beams, not substantially circular beams

It should be noted that Forman belongs to Schneider which is owned by Boston Scientific. Thus Forman and the instant application are owned by the same entity.

Notwithstanding the ownership issue above, in response, Applicant points out that a beam from a circular cross section is not equivalent to an annular beam. The instant claim

recites the use of at least one annular beam in the process; thus, one such annular beam can perform the process. The alluded to embodiment of Forman utilizes fiber optic cables to split the beam into a multiplicity of discrete beams in order to realize an annular bond at the bond site. However, at no time is a sole annular beam used in this embodiment of Forman. Because a multiplicity of discrete circular beams is not an annular beam, Forman does not anticipate. Applicant respectfully requests that the 102(b) rejection over Forman be withdrawn.

7

In the Office Action dated May 23, 2002 claims 1, 15, 27-29 were rejected under 35 USC 103(a) as being unpatentable over Forman (US 5,501,759) in view of Wysocki et al (US 5,339,380). Claims 1 and 27 have been amended to include the feature of over-lapping an end of the at least one polymeric material with an end of the polymeric catheter tube thereby creating an over-lapped portion. As discussed above, Forman does not disclose the use of one or more annular beams. Wysocki discloses a method for splicing fiber optic cables. The cables do not overlap with one another. The splicing of adjacent fiber optic cables is far removed from sealing at least one polymeric material to a polymeric catheter tube. Therefore, even if Wysocki discloses the use of an annular beam, there is no motivation, notwithstanding Forman, to apply the splicing techniques of Wysocki to seal at least one polymeric material to a polymeric catheter tube by generating at least one annular beam of electromagnetic energy as recited in the instant claims.

Even if the references were combined, the combination would result in spliced tubes and polymeric material. This is not the subject matter of the instant claims. The instant claims disclose over-lapping tubes and polymeric material.

In short, Wysocki is not a proper combination with Forman, and even if this combination is made it does not disclose all of the claim elements. Applicant respectfully requests that the 103 rejection over Forman in view of Wysocki be withdrawn.

8

In the Office Action dated May 23, 2002 claim 14 was rejected under 35 USC 103(a) as being unpatentable over Forman (US 5,501,759) in view of Wysocki et al (US 5,339,380) and further in view of Erlich (4,772,275) and Vrba (US 5,957,930). The Office Action states that Erlich discloses adhesive bonding or welding a catheter sheath onto a catheter tube and that Vrba discloses adhesive bonding or welding of a retractable sheath onto a catheter tube. The Office Action further states that it would have been obvious in the art to apply the laser heat-welding technique of Forman or (Forman taken with Wysocki) in attaching a catheter sheath onto a catheter tube in the process taught by Erlich or Vrba.

As addressed above in section 7, combining Forman with Wysocki is not an appropriate combination, and Forman does not include generating at least one annular beam. Neither Erlich nor Vrba are relied upon to supply this missing teaching. In light of the inappropriateness of the combination of Forman with Wysocki and the failure of the combination to disclose all of the elements of the instant claims, Applicant respectfully requests that the 103 rejection of instant claim 14 be withdrawn.

9

In the Office Action dated May 23, 2002 claim 24 was rejected under 35 USC 103(a) as being unpatentable over Forman (US 5,501,759). As addressed previously, Forman does not disclose the use of at least one annular beam. Moreover, Forman does not suggest simultaneously generating at least two annular beams and performing the bonding process at two locations simultaneously as recited in the instant claim. Applicant therefore respectfully requests that the 103 rejection of claim 24 be withdrawn.

10

In the Office Action dated May 23, 2002 claim 24 was rejected under 35 USC 103(a) as being unpatentable over Forman (US 5,501,759) in view of Wysocki et al (US 5,339,380) and further in view of Buchroeder et al (US 4,623,776).

The Office Action states that simultaneously laser heating a tubular work-piece at two locations is known in the art and exemplified in the teachings of Buchroeder (Fig. 3). However, Buchroeder discloses laser cutting at a single circular location. Fig. 3 of Buchroeder illustrates a cross-section of a circular laser cut. It does not disclose two separate cutting locations. The instant claim recites a process for sealing at least one polymeric material to another polymeric catheter tube at two locations simultaneously. Buchroeder neither discloses two simultaneous sealing locations nor suggests applying this process to catheter tubes. Therefore, even if the proposed combination with Forman was appropriate, all elements of claim 24 of the instant application would not be disclosed. Applicant respectfully requests that the 103 rejection of instant claim 24 be withdrawn.

CONCLUSION

In light of the above, withdrawal of the rejections is requested. Early notification that pending claims 1, 14, 15, 24, 27-29, and 31-32 are in condition for allowance is earnestly solicited.

Respectfully submitted,

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Marked-up Version of the Amended Claims

1. (Amended) A process for sealing at least one polymeric material to a polymeric catheter tube, comprising the steps of:

longitudinally over-lapping an end of the at least one polymeric material with an end of the polymeric catheter tube thereby creating an over-lapped portion;

generating at least one annular beam of electromagnetic energy that is at least partially absorbed by at least one of the polymeric material and the polymeric catheter tube at a selected energy wavelength;

controllably directing the annular beam of electromagnetic energy onto the polymeric material to concentrate the energy in a bond site on the over-lapped portion circumscribing the catheter tube to at least partially melt at least one material selected from the group consisting of the polymeric material and the polymeric catheter tube along the bond site and the immediate region thereof; and

allowing the at least one partially melted material to cool and solidify to form a fusion bond between the polymeric catheter tube and the polymeric material.

27. A process for bonding at least one polymeric material to a polymeric catheter tube comprising the steps of:

longitudinally over-lapping an end of the at least one polymeric material with an end of the polymeric catheter tube thereby creating an over-lapped portion;

generating at least one annular beam of electromagnetic energy that is at least partially absorbed by at least one of the polymeric material and the polymeric catheter tube at the selected energy wavelength;

controllably directing at least a portion of the annular beam of energy onto the polymeric material to concentrate the energy in a bond site on the over-lapped portion circumscribing at least a portion of the polymeric catheter tube to at least partially melt at least one material selected from the group consisting of the polymeric material and the polymeric catheter tube along the bond site and

the immediate region thereof; and allowing the at least one partially melted polymeric material to cool and solidify to form a fusion bond between the polymeric catheter tube and the polymeric material.